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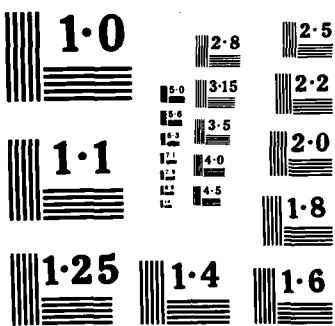
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VALUE ENGINEERING CONFERENCE REPORT

"VE - A TOOL THAT BENEFITS LINE MANAGEMENT"

PART I

EXECUTIVE SUMMARY

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This Conference Report summarizes and consolidates the proceedings from the 1984 DoD Value Engineering Conference held 1-2 November in Leesburg, VA. The findings and recommendations with supporting material from the five workshops are provided in addition to the complete plenary session presentations. An Executive Summary is presented in PART I.		



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WASHINGTON, D.C. 20301 3060

RESEARCH AND
ENGINEERING
(AM/PESO)

17 JUN 1985

DoD Value Engineering
Conference Report

The November 1 and 2, 1984 Department of Defense Value Engineering (VE) Conference appeared to be well received. Most attendees were complimentary in their evaluations. I would like to thank those who supported and attended this conference. The enthusiasm and hard work displayed in the five workshops resulted in a large number of ideas for improving the DoD Contractor VE Program. It is an excellent beginning. We have now identified some of the problems that have impeded the success of the VE program. Many workable solutions were proposed. As we develop and execute the resulting action plan, I am sure that VE savings will continue to grow towards its full potential. Again, thanks to all those who attended for your cooperation in this conference.

Mary Ann Gilleece
Deputy Under Secretary
(Acquisition Management)

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**EXECUTIVE SUMMARY FOR
DOD VALUE ENGINEERING CONFERENCE REPORT**

This conference brought together Government personnel with an interest in the DoD Contractor VE Program. In addition, several contractors were invited in order to provide a balanced perspective. The response to this DoD VE conference was reflected by an attendance that was more than double the original estimates. Almost 300 registered.

The September 27, 1983 report by the General Accounting Office entitled, "Value Engineering Should be Improved as Part of the Defense Department's Approach to Reducing Acquisition Cost," noted that savings from our contractor VE program would almost triple if the DoD VE Change Proposal (VECP) savings goal of 0.7 percent of the procurement total obligation authority (TOA) were met.

With this in mind, the objective of this conference was to identify and recommend solutions to the impediments that restrain contractor participation in the program. After the plenary session, where DoD and industry presentations set the tone for the conference, the participants separated into workshops which focused on five distinct yet related areas. From these five separate viewpoints, a number of common concerns were identified. These concerns are summarized in the following paragraphs.

Proposed Actions

Up-Front Funding: Some VE Proposals (VEPs) and VECPs require funds for an initial investment because there are no savings or perhaps even "negative savings" on the instant contract. Possible solutions include: (1) Establish a budget line item to fund VE investments. (2) Reapply funds from VE savings on accepted and implemented VEPs/VECPs. (3) As in Industrial Modernization Incentives Program (IMIP), have the contractor absorb the cost of a VECP and then be paid back with initial savings after which savings would then be shared. (4) Generate a pool of investment funds by allocating for VE a small percent (1/10 to 1/2 percent) of the funding for each program.

VECP Processing Time: The impediment cited most often was the excessive length of time for the Government to respond to a VECP. This is also unsatisfactory from the DoD perspective as VECP savings are perishable. The earlier a VECP can be accepted and implemented, the greater the savings that can be obtained. Possible solutions include: (1) Submit a preliminary VECP to test government receptivity. If favorable follow with a formal and complete VECP. (2) Make VECP approval a two-step process. Upon technical approval, issue an Engineering Change Order (ECO) so that the contractor can start incorporating the approved change. Follow immediately with discussions to determine the exact economies and negotiate promptly the contract modification. (3) Establish

higher priority for processing VECPs. (4) Enforce 45 day limit for responding to a VECP. Provide 90 days for contract modification after VECP acceptance. (5) Have Administrative Contracting Officiers (ACOs) assist contractors with VECP submittals and ensure technical completeness and economic reasonableness prior to formal submission.

VECP Approval/Disapproval: There is a need for objective and timely review. Disapprovals are sometimes based on invalid reasoning, expediency, or negative attitudes. Possible solutions include: (1) Review by the next higher authority a portion of all rejections (at least 10 percent). (2) Increase VE training for those responsible for reviewing technical adequacy of VECPs.

VE Training: One of the major impediments to a more successful DoD Contractor VE Program is the lack of understanding among contractor and Government personnel of the intent, benefits, and procedures. Recommendations include: (1) Provide intensive VE familiarization training to middle management personnel. (2) Make the Contractual Aspects of Value Engineer (CAVE) course mandatory for all contracting officers and negotiators above GS-5. (3) Appoint at least one trained VECP expert at each buying activity. (4) Make attendance at the Principles and Applications of Value Engineering (PAVE) course mandatory for all engineers, technicians, and scientists seeking a grade of GS/GM-13 or above. Encourage PAVE attendance by GS-9 - GS-12 engineers.

Improvement of Communication: Recommendations: (1) Communicate accepted VE actions to all DoD activities and Defense contractors. The defense community would be able to capitalize, to our mutual benefit, on an extensive data base of accepted VE actions. It will provide a source of ideas and would eliminate duplicate analysis and speed approval of similar proposals. (2) Publicize the benefits and encourage the use of the DoD Value Engineering Data Information Storage and Retrieval System (VEDISARS). VEDISARS, now a two-year pilot program, will provide some of this communication. (3) Include "no-cost" ECPs in the VEDISARS data base.

Accounting for VE Savings: Recommendations: (1) Develop more rigorous accounting for VE savings benefits to improve credibility and identify how the savings are reapplied. (2) Develop OSD policy statement that savings benefits should be returned to the program office or command for reapplication whenever possible. This policy would encourage VECP activity by rewarding those who successfully accept and implant them.

VE as Performance Review Item: Recommendations: (1) Incorporate VE successes as a measure of job performance for engineers, Procurement Contracting Officers (PCOs), and all others that have an effect on VEPs or VECPs. (2) Include VE actions and status in program reviews to encourage participation by program managers. (3) Establish VECP goals for major programs.

Improvement of Collateral Sharing Incentives: VECP sharing arrangements were originally intended to compensate contractors for the loss in billings on current ("instant" and concurrent) contracts. Later, contractors were provided a share of collateral savings. This latter change was intended to direct contractors' attention to potential savings in operating, maintenance, and logistics areas. These latter areas represent some 60 percent or more of the cost of a major program. The contractor's share of collateral savings is smaller than the share of acquisition savings. The current share may be too small to compensate contractors adequately for their investment and risk in VECPs addressing collateral savings. Collateral savings areas represent an enormous opportunity. Recommendation: Increase the contractor's share of collateral savings to a more equitable level to encourage more VECPs with substantial collateral savings.

The findings and recommendations for each workshop are presented in following sections.

WORKSHOP "A"

(VE in the Program Office)

Executive Summary

RECOMMENDATIONS

- 0 Establish a VE goal for each weapon program and track progress to it.
- 0 Provide VE visibility by including training modules in courses offered at senior service schools such as DSMC.
- 0 Within each military department establish an investment Fund to provide front end funding for appropriate VECPs. This seed money would be available to take advantage of targets of opportunity. VE investment funds must transcend "color of money" considerations.
- 0 Reduce VECP throughput time - pay special attention to reducing VECP processing time.
- 0 Use preliminary VECPs to identify unacceptable ones early and thus increase approval rate.
- 0 Improve quality and comprehensiveness of VECP evaluations/responses from program offices.
- 0 VECPs must be considered in light of lowest life cycle cost.
- 0 VE Awareness must be a continuing effort
 - Train/inform PCO's program managers.
 - Address VE status at program management reviews.
 - Update VE Handbook.
 - Inform public of gains from VE (both in-house and external media).
- 0 Fund for negative savings on instant contracts to secure later gains.
- 0 Review some portion of rejected VECPs (annually)
 - Example: 10 percent of rejections/year at one organizational level above rejecting level.
- 0 Establish a "VE Road Show" highlighting significant success stories using displays and video tapes.

- 0 Create a "DoD VE Fellow" program.
- 0 Permit those with awards for significant VE accomplishments to accompany high level DoD member(s) on a desirable review or trip as individual incentives.
- 0 Provide incentives and encourage qualified personnel to remain longer in dedicated VE positions.
- 0 DoD should identify and provide VE "fenced" slots to services.
- 0 Contractors have a responsibility to sell VECPs effectively, just as any other proposed change.
- 0 Encourage the use of the VE program clause during full scale engineering development to avoid baseline problems and gain benefits from VE early in a program when they are greatest.

WORKSHOP "B"
(Value Engineering (VE) - Spares)
Executive Summary

RECOMMENDATIONS

- O VE efforts in the spares area are mostly in-house. There is a need to increase VECP efforts in the spares area and by encouraging more contractor involvement.
- O Reverse engineering is a must for spares parts, especially because of the lack of adequate data.
- O The Services need to place new emphasis on resources in their Engineering Support Activities (ESAs) to support their own VE efforts, the DLA VE in-house program, and contractor VECPs.
- O The absence of adequate technical data to support competition in the purchase of spare parts is still an underlying problem. There is a need to speed OSD implementation of the new requirements of Title XII to improve data calls from prime contractors.
- O There is a need to continue emphasis on the interaction of VE and standardization. We also need to improve communications between VE, standardization and Item Managers.
- O Our Competition Advocate Programs are working, but they are labor intensive. There is a need for DoD to continue to emphasize the program and encourage the use of VE.
- O We need to publicize the new Value Engineering Data Information Storage and Retrieval System (VEDISARS). A two-year pilot test in the Government Industry Data Exchange Program (GIDEP) has started. We should publish success stories in the bi-monthly GIDEP Newsletter.
- O We need a better feedback loop on VE experiences to help now Program Managers.
- O There is a need to establish dedicated VE Program Managers in all Contract Administration Services.
- O A Contract Administration Office (CAO) participant reported his office was administering concurrent production contracts for the same equipment for two Military Services. The contractor developed and tested a redesign of a major subassembly to reduce production costs while maintaining the same or slightly improved performance and reliability. Identical VECPs were submitted to both customers. The CAO recommended adoption of the change by both customers. One customer accepted the change, the other did not. The contractor now must manufacture smaller quantities of

both configurations with attendant increased production costs for each. A system is needed to encourage DoD components using the same item to accept VECPs accepted by other components.

O All of the above accentuate the need for improved communications to tell of VE achievements, the problems solved, and standardization and supply improvements realized.

WORKSHOP "C"

(VEP/VECP Administration, Negotiation, and Implementation)

Executive Summary

IMPEDIMENTS/RECOMMENDATIONS

The following impediments to the use of VE were identified along with some recommendations to overcome the impediments.

<u>IMPEDIMENT</u>	<u>RECOMMENDATION</u>
Need for up front funding.	<ul style="list-style-type: none">(1) OSD budget as a line item(2) Develop a pool of funds program managers can draw on and repay out of savings.(3) Fund program requirements in early R&D.(4) Fund for collateral savings.
Lenthly VE Processing Time.	<ul style="list-style-type: none">(1) Use change order to implement into Technical Data Package with subsequent negotiation of savings.(2) Require priority handling to get most savings benefit.
Lack of motivation of Program Managers.	<ul style="list-style-type: none">(1) Assign VE savings goals.(2) Reward achievement and penalize failure or absence of achievement.
No procedures to apply VE to software.	<ul style="list-style-type: none">(1) Set up experiment to prove methodology.
No motivation for subcontractors.	<ul style="list-style-type: none">(1) Assure 30 percent of savings to subcontractors.(2) Change FAR to allow this.
Move VE Actions into Early R&D.	<ul style="list-style-type: none">(1) Change FAR to establish early VE baseline.

DCAS goals removed with subsequent drop in VE activity.	(1) Reestablish VE goals.
VECP disapprovals need review.	(1) Direct communication between contractors and PM with DCAS. (2) Invite contractor to CCB. (3) Require Engineering justification for refusal.
Lack of ongoing training in VE.	(1) Setup VE training goals for Services and DLA contracting officers and administrators.
Unsolicited VE proposals not allowed.	(1) Change FAR to allow.
Top management not involved.	(1) Make VE an item to be addressed at all program reviews.
Negotiation process overlooks VE.	(1) Include VE specialist in negotiation team.
VE not in contract award selection criteria.	(1) Include VE in proposal as one element in selection criteria.
Contracting personnel place low priority on VE.	(1) Include VE results as an element in performance standards.

WORKSHOP "D"
(VE Training)
Executive Summary

RECOMMENDATIONS

- O Implement a training program patterned after that summarized in Figure 1. Target those organizations currently perceived as unresponsive to contractor efforts for early attendance at this training.
- O The Principles and Applications of Value Engineering (PAVE) course should be made mandatory in the career development plan for engineers, scientists, and other technical specialists.
- O The Contractual Aspects of Value Engineering (CAVE) course should be made mandatory in the career development plan for Value Engineering Program Managers (VEPM's), Procuring Contracting Officers (PCO's), Administrative Contracting Officers (ACO's), and contract negotiators.
- O DoD should develop a video tape to focus on a total commitment for VE from DoD top management. In addition, new films or video tapes showing the most current principles and guidance for use in the PAVE and CAVE courses should be developed.
- O The VE staff should continuously familiarize cognizant personnel on internal procedures to be followed in processing VECP's and VEP's.
- O Develop an approach to measure VE training performance for application by VE program managers at the installation/activity level.
- O Emphasize public relations for VE. Target audiences for this effort are Congress, all DoD activities, communications media, the general public, and academia. This publicity should reflect the total commitment to VE within DoD and the successes being achieved.
- O Management should be evaluated in terms of achieving VE goals and objectives during their performance evaluation.
- O Government personnel should be given a share of the savings resulting from their participation on successful VEP's.
- O The use of VE during the life cycle should be incorporated into the draft MIL-STD 499B, "Engineering Management."
- O DoD should expedite the publication of the DoD VE Handbook.

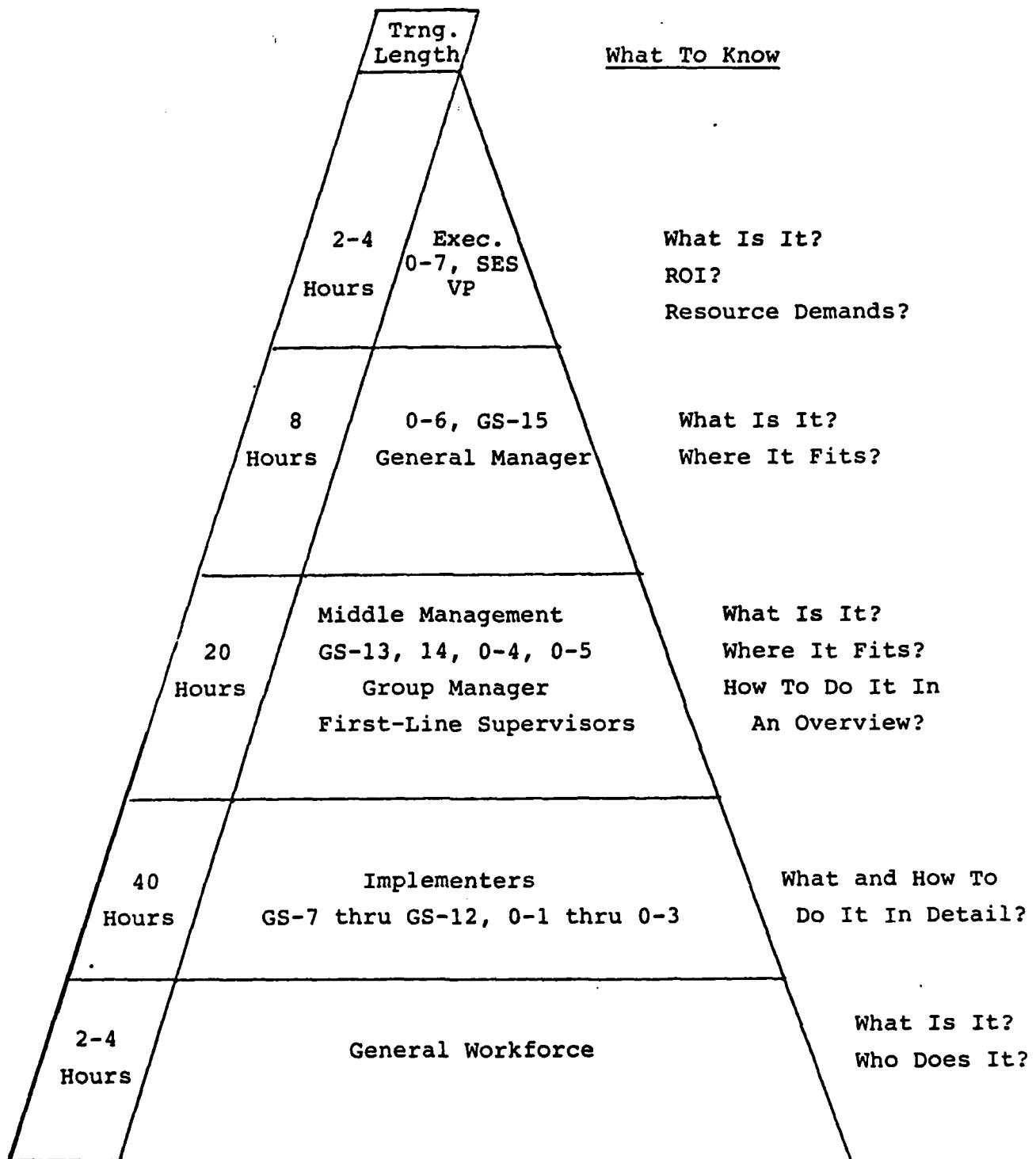


Figure 1

WORKSHOP "E"

(VE in Construction and Architect Engineer Contracts)

Executive Summary

IMPEDIMENTS

0 Management Attitudes

- Perceived as a delay
- Should have done it right first time
- How will it benefit me?
- Subjects to exposure and criticism
- Cheapening process
- Brooks Bill conflict
- Bureaucratic and empire building
- Increases design fee
- Design breakage
- Appearance of poor planning

0 Professional Resistance

- Perceived as peer technical review
- Do not like second opinions (second guess)
- Creates changes
- Perceived as a delay
- Fear of reduction in design fee

0 A/E Has No Incentive to Reduce Project Cost and In Turn Reduce Fee

0 Auditors

- Disincentive to project managers
- Additional paperwork
- Detail documentation requirement

0 Training

- Very few executives trained
- Lack of training funds
- Existing courses outdated

0 User/Activity Attitudes

- No incentives to save allocated funds
- Whats in it for me?
- Apprehension of losing pleasing features
- Conflicts with activity's architectural plan
- No incentives to reduce cost when project is within cost
- Fund overruns can be rectified by requesting additional funds (Congress or Sponsor)

FINDINGS

- O General consensus
 - Value engineering is not only good but needed
 - High potential in value engineering
- O Corps of Engineers and Naval Facilities Engineering Command have ongoing successful VE programs
- O Air Force and Marine Corps are currently establishing VE program
- O High probability of achieving the DoD 5 percent VE goal
- O VE practitioners' civil service grades are below level of responsibility
- O Currently inadequate resources restrict total success
- O Best opportunity for success is early on in the design process; least opportunity after construction starts
- O 5 percent of VE savings identified during the design process with less than 5 percent during construction contractor phase (VECP)
- O New FAR clause as currently written does not properly address architect/engineer design contracts
- O Accounting roadblocks restrict total number of studies conducted, inhibits travel and hinders VE training
- O Construction contractors still reluctant to participate in VECP program
- O Response/resolution time to VE team studies and contractor VECPs is unacceptable
- O 50 percent of VE studies are being performed by VE contractors (A/Es) and 50 percent by in-house staff, with largest (average) savings generated by contractor studies
- O Criteria challenges identified by VE studies are seldom approved due to the approval process
- O VE consultant fees are higher than normal A/E fees due to on-call availability and higher than normal gaps in workload
- O Implementation rates are extremely good when project is over funds available
- O Customer/user has greatest impact on poor implementation
- O VE coordinators have the responsibility to meet DoD goal but have little authority on implementation

RECOMMENDATIONS

- 0 OSD must set the tone by signing out a strong policy memo supporting need and requirement for value engineering
- 0 VE must be a DoD functional requirement
- 0 Management must increase commitment by providing leadership, people and resources
- 0 Congressional provisions should be made to return all funds saved through VE to user/sponsor for re-application to unfunded outyear projects (incentive)
- 0 Management Performance Standard (MPS) requirement for all military O-3 and above and GM-13's and above to attend a 4-hour value engineering executive brief.
- 0 MPS objective (critical element) for DoD five percent VE goal in all division directors/department heads objectives as well as VE coordinators objectives
- 0 Expand VE awards program to include monetary awards to working level personnel
- 0 Improve VE implementation percentages by instituting a second level review board
- 0 Set VE coordinators GM grade level commensurate with level of responsibility. Branch manager level at a minimum
- 0 Establish annual tri-service VE budget based on 1/2 of one percent of the programmed amount for military construction program (MILCON)
- 0 Improve response time to all VE recommendations and construction contractor VECP suggestions.
- 0 Develop tri-service educational program for training and educating all managers, end users and construction contractors
- 0 Improve public relations on benefits to DoD and taxpayers

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